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ABSTRACT

Goal-setting literature has suggested that specific, difficult goals will produce higher performance levels than easy goals. A difficult task or one with negative performance feedback may increase an individual's perceived challenge of the task which may in turn enhance his motivation. Effects of the Protestant work ethic and perceived challenge on subjects' time allocated to an experimental task were examined in two experiments. In Experiment 1, using 49 volunteers, employees of a manufacturing company located in Cleveland, Ohio, the perceived challenge was manipulated by labeling an identical task (anagram solution) as either difficult or easy. Participants completed personality measures including the measurement of their endorsement of the Protestant work ethic. Most time on task occurred for the subjects who scored a low work ethic and when the task was labeled as difficult. For subjects who endorsed the work ethic, their free-choice time was not affected by the task label. In Experiment 2, using 57 Taiwan college students, the perceived challenge was manipulated by providing negative versus positive effort performance feedback. Low work ethic subjects in the negative feedback condition again spent the highest amount of their free-choice time on the task. High work ethic subjects' behavior in the free-choice period was not affected by the performance feedback. Further, people with medium work ethic endorsement allocated more free-choice time to the task in the positive feedback condition than they did in the negative feedback condition. Results suggested that low work ethic individuals exerted more effort in the free-choice period when they were challenged. (ABL)

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Effects of the Protestant Work Ethic and Perceived Challenge on Time Allocated to an Experimental Task

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Running head: WORK ETHIC AND CHALLENGE

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Experiment 1 was presented at the 32nd Annual Meeting of Southeastern Psychological Association, Kissimmee, FL, March, 1986. Experiment 2 was presented at the National and Western Region Conference of the Association of Human Resources Management and Organizational Behavior, Denver, CO, February, 1985.

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Abstract

Effects of the Protestant work ethic and perceived challenge on subjects' time allocated to an experimental task were examined in two experiments. In Experiment 1, the perceived challenge was manipulated by labeling an identical task as either difficult or easy. Subjects spent the most time on the task during the free-choice period when they did not value work and the task was labeled as difficult. For subjects who endorsed the work ethic, their free-choice time was not affected by the task label. In Experiment 2, the perceived challenge was manipulated by providing negative vs. positive effort performance feedback. When high and low work ethic subjects were examined, low work ethic subjects in the negative feedback condition again spent the highest amount of their free-choice time on the task. High work ethic subjects' behavior in the free-choice period was not affected by the performance feedback. Further, people with medium work ethic endorsement allocated more free-choice time to the task in the positive feedback condition than they did in the negative feedback condition. The present study suggested that low work ethic individuals exerted more effort in the free-choice period when they were challenged. The results were discussed in light of perceived demand characteristics and self-presentational concerns.

Effects of the Protestant Work Ethic and Perceived Challenge on Time Allocated to an Experimental Task

The major purpose of the present investigation was to examine the effects of the Protestant ethic (PE) and perceived challenge on the amount of time subjects spent on an experimental task. In the paragraphs that follow, theories and research related to the perceived challenge, intrinsic motivation, and the Protestant ethic will be reviewed.

Perceived Challenge and Intrinsic Motivation

In the goal-setting literature, many studies have suggested that specific, "difficult" goals will produce higher performance levels than "easy" goals (e.g., Locke, 1968; Locke, Frederick, Lee, & Bobko, 1984; Locke & Latham, 1984; Locke, Shaw, Saari, & Latham, 1981). Difficult goals also produce relatively high levels of "arousal" (Wright & Brehm, 1984). Recently, Salomon (1984) argued that ne factor which affects the amount of invested mental effort is a person's perceived demand characteristics (PDC) of the stimulus, task, or context. The more demanding PDC is, the greater amount of mental effort will be expended. Therefore, up to a point, increasing the difficulty of goals increases the perceived challenge of the task. This, in turn, increases the amount of effort expended for goal attainment.

Intrinsic motivation is defined as performing an activity for no reward except the direct enjoyment of the activity itself (Deci, 1971). It has been suggested that verbal reinforcements tend to enhance subjects' intrinsic motivation on a task (Deci, 1972), whereas a threat of punishment for poor performance may undermine people's intrinsic motivation (Deci & Cascio, 1972). Deci (1972) explained that "with negative feedback, a very small amount could

serve as a challenge to the person, making him more intrinsically motivated" (p. 224, emphases added). Intrinsic motivation will lead to behavior involved with conquering challenges (Deci, 1975). However, if enough negative feedback were given to subjects, it could influence people's sense of competence and self-determination which, in turn, might lead to a decrease in intrinsic motivation (Deci, 1972).

Following Deci's (1972, 1975) argument, one would expect that if individuals were given opportunities to conquer challenges, then, they might show high intrinsic interests in doing that task. Further, a difficult task or a negative performance feedback may increase an individual's perceived challenge of the task, which, in turn, may enhance his or her intrinsic motivation in that target task. Based on these ideas, the present author proposed that "perceived challenge" could be manipulated by either providing subjects a difficult task (Experiment 1) or negative performance feedback (Experiment 2). The personality variable examined in the present study was the endorsement of the Protestant ethic.

Protestant Work Ethic

In his Experiment I, Greenberg (1977) found, when subjects worked alone, that positive feedback improved the performance of both high and low Protestant ethic subjects (PEs) but that negative feedback enhanced high PEs' performance while lowering low PEs' performance. In Greenberg's Experiment II, subjects worked alone but were told that their performance would be linked with that of another subject to determine the receipt of external rewards. All subjects received negative feedback at the midpoint of the task period, but one-half were told they would still be rewarded because their partner was doing well ("expect success" condition) while the other half was told they would not be rewarded even

though their partner was doing well ("expect failure" condition). Subsequent to the feedback, the performance of high PE subjects was not affected by the "expect success" vs. "expect failure" manipulation; however, for low PE subjects, the "expect failure" group peformed at a higher level than the "expect success" group, but still significantly lower than either of the high PE groups. Experiment II of Greenberg suggests an extrinsic orientation for low PE subjects; their performance dropped when assured of a reward regardless of their performance and increased when such an improvement might lead to a reward. High PE subjects were more intrinsically motivated as their performance was not affected by the probability of receiving an extrinsic reward. Greenberg's (1977) results might be explained, in part, by low PEs' external locus of control (e.g., Aldag & Brief, 1975; Mirels & Garrett, 1971).

Further, McClelland (1961) observed that the characteristics of high PE described by Weber (1904-05/1958) seemed to be similar to those of individuals high in n Achievement. McClelland (1985) stated that "subjects low in n Achievement sometimes show signs of greater arousal" (p. 226) and are highly affected by the "fear of failure" (p. 227). Thereby, it was reasonable to expect that low PEs would also have greater arousal and be highly affected by the fear of failure.

Bond and Titus (1983) concluded that the presence of others increases the speed of "simple" task performance and slightly facilitates simple performance accuracy, but decreases the speed of complex task performance and impairs complex performance accuracy. Tang and Baumeister (1984) suggested that "the relation of work-ethic endorsement to allocation of free-choice time depends partly on self-presentation (perceived surveillance)" (p. 104, emphasis added). According

to Baumeister (1982), a person's self-presentational motives are related to the motive to please others and to construct one's public self. In the present study, the major dependent variable was subjects' time allocated to an experimental task, not speed of task performance or performance accuracy. It was expected that the presence of others might increase subjects' self-presentational concerns.

In summary, the present author proposed that high and low PEs might have different behavioral orientations. High PEs are industrious, ambitious, hard working, and intrinsically motivated. They have internal locus of control and are not easily affected by external factors. For high PEs, their behavioral oreintation in a free-choice period is to work equally hard on the task at hand regardless of the nature of the task (Experiment 1, difficult vs. easy) or other external factors (Experiment 2, negative vs. positive performance feedback).

Low PEs are not hard-working individuals. They have external locus of control, high arousal, and extrinsic orientation. Low PEs are easily affected by the fear of failure and external factors. Their primary motive in the situation is to get by without working very hard. Low PEs will exert their effort and spend the most time on the task in order to avoid failure or embarrassment only when they are challenged (i.e., in the difficult task or negative feedback condition). That is, the combination of subjects' low work ethic endorsement and the perceived challenge would lead to the highest amount of time allocated to an experimental task. More specifically, an interaction effect between work ethic and perceived challenge was proposed for both experiments. The procedure suggested by Bobko (1986) was adopted to examine ordinal interactions.

Experiment 1

In Experiment 1, the "perceived challenge" was manipulated by labeling an identical task as either "difficult" or "easy". The experiment was conducted in a social context, therefore, a high level of self-presentational concerns was expected. More specifically, the following hypotheses were tested:

H1: Low PEs in the perceived challenge (i.e., difficult) condition would spend more time on the target task during the free-choice period than would those in other groups.

H2: There would be no significant difference between high PEs' free-choice behavior in the perceived challenge (i.e., difficult) condition and in the no perceived challenge (i.e., easy) condition.

Further, an ANOCOVA was employed using subjects' task performance during the first work period as a covariate. The results of this analysis would be used to examine the extent to which subjects' free-choice behavior would be affected by their task performance in the first work period. It was argued that subjects' free-choice behavior in a social context (which could be considered by subjects as a continuation of the first work period) would be related to their task performance in the first period, i.e., an expression of their self-presentational concerns.

Method

Subjects

Fifteen male and 34 female employees (N = 49), 10 per cent of the work force, from the world headquarters of a major manufacturing corporation located in Cleveland, Ohio volunteered for this study. Eighteen of them were managers or professional employees who had at least a master's degree and 31 were clerical

workers who might have had several years of college. All subjects worked in the same building and knew each other. The average age of these participants was 33.

No significant sex difference was found in subjects' endorsement of the Protestant work ethic, F (1, 47) = .35, p = .56. Further, no significant difference of work ethic endorsement between professional employees and clerical workers was found, F (1, 47) = .31, p = .58. Therefore, all subjects were combined in the data analyses. Moreover, professional and clerical workers were evenly distributed in the four experimental conditions. The mean and standard deviation of subjects' work ethic measurement (N = 49) were 81.55 and 12.19, respectively. The cut-off point for the medium split was 81.5 on the work ethic measure.

Procedures

Five groups of volunteers were met by a male experimenter. There were 10 subjects in each group. After signing the consent form, all subjects were asked to complete some personality measures including the measurement of the Protestant work ethic (Mirels & Garrett, 1971) and other filler items.

Three groups (n = 30) were given a "difficult" task and two groups (n = 19) were given an "easy" task at random. The experimenter knew whether subjects had received the difficult or the easy instruction. However, the experimenter was blind as to whether subject's endorsement of the work ethic was high or low.

Subjects in the perceived challenge (no perceived challenge) group were told that they would solve some difficult (easy) anagrams. In fact, all subjects were given the same anagram list.

Then, subjects were asked to solve anagrams for 15 minutes. After the work

period was over, the experimenter noted that the alloted experimental hour had not yet expired and asked if subjects would mind pretesting some materials that the experimenter was preparing for his next experiment. All subjects consented. The experimenter then told the group that he had three sets of tasks for them to do: an anagram-solving task, a word construction task, and graphic puzzles. Subjects were asked to identify the most interesting task and the most difficult task among the three. This was a very "simple" task for subjects (cf. Bond & Titus, 1983). All subjects were encouraged to try each of these three tasks, or they could just relax and do nothing. The experimenter told subjects that he had to leave the room to get copies of the final questionnaire and would be back in a few minutes. Subjects were then left in the room for 15 minutes (the free-choice period).

A common measure of intrinsic motivation is the amount of time subjects spend on the target activity in a free-choice period without knowing that they are being observed (Deci, 1971; Lepper & Greene, 1975; Lepper, Greene, & Nisbett, 1973). Because of the fact that there were 10 subjects in the conference room and there was no one-way mirror in the setting, the author used a self-rating form to collect data concerning their task preference during the free-choice period.

The rating form used in this study was tested in a pilot study. In this pilot study, only one subject was involved in each experimental session. Forty subjects were presented with a simple form which measured the amount of time the subject spent on each of the three activities and on relaxation. The anchor points for each were labeled from 0 minute, 1 minute, 2 minutes, through 15 minutes, using half a minute as a unit. Each subject's free-choice behavior was

also recorded by an independent observer behind a one-way mirror using a stop watch. The correlation between subjects' own estimate of time spent on the target activity and the observer's recorded data was .975, $p < .001$, and the difference between the two was negligible, t (39) = .39, p = .701. Therefore, the same rating form was adopted for the present study to measure subjects' free-choice behavior.

After the 15-minute free-choice period was over, the experimenter re-entered the room and gave subjects a final questionnaire which measured the amount of time subjects spent on each of the three tasks and relaxation. Subjects were then debriefed and asked not to disclose the nature of the experiment. The experiment lasted for approximately 80 minutes for each group.

Results

Task Performance

The number of anagrams solved in the first period was analyzed in a 2 x 2 ANOVA. No significant main effects were found. The interaction effect between work ethic and perceived challenge also failed to reach significance, F (1, 45) = 1.84, p = .184. The pattern of the four means showed that low PEs in the perceived challenge (i.e., difficult) condition solved 22.25 anagrams, whereas high PEs/difficult group, high PEs/easy group, and low PEs/easy group solved 14.92, 13.70, and 13.56 anagrams, respectively.

Task Preference

The main focus of the present study was to ascertain the effects of perceived challenge (difficult vs. easy) and endorsement of the work ethic on the amount of time subjects chose to spend on the anagram task during the free-choice period in a social context (task preference). The interaction between work ethic

and perceived challenge on task preference was significant F (1, 45) = 4.68, p = .036, omega squared = .071. The main effects of work ethic endorsement and perceived challenge did not reach significance, F (1, 45) = 1.28, p = .264; and F (1, 45) < 1; respectively. The means of the interaction effect are presented in Table 1.

Insert Table 1 about here

It was hypothesized that after subjects performed on a "difficult" task, low PEs would spend more time on the anagram task during the free-choice period than would those in other groups. The procedure suggested by Bobko (1986) was used here to examine the differences among the four cell means. First, a one-way ANOVA was conducted to examine the differences among high PE/difficult task, high PE/easy task, and low PE/easy task. The results showed that there were no significant differences among the three means, F (2, 31) = .86, p = .434. Second, the result of a planned comparison t test showed that low PEs in the difficult condition spent a significantly higher amount of time on the target task during the free-choice period (M = 516.00) than did the average of the other three groups (M = 383.55), t (45) = 3.54, p < .01. Therefore, H1 was supported by the present data.

It was hypothesized that for high PEs, the amount of time spent on the anagram task would not be influenced by the perceived challenge in the experiment. The results of a simple main-effects test supported this hypothesis in that the difference between high PEs in the difficult group and those in the easy condition failed to reach significance, F (1, 45) = 2.17, p = .148. Thus,

the present finding failed to reject the null hypothesis (H2).

According to the simple main-effects test for subjects in the difficult condition, low PEs spend more time on the target task than did high PEs, F (1, 45) = 4.98, p = .031. In the easy condition, the simple main-effects test showed that there was no significant difference between high PEs and low PEs' free-choice behavior, F (1, 45) = .96, p = .33. No significant difference was found between low PE/difficult task and high PE/easy task, t (45) = .67, p > .05. Moreover, for low PEs, the results of the simple main-effects test was not significant, F (1, 45) = 3.50, p = .068.

Analysis of covariance on subjects' task preference with their task performance (i.e., the number of anagrams solved during the first period) as a covariate was performed. The results showed that when actual performance was held constant, the interaction effect between work ethic and perceived challenge on subjects' free-choice behavior failed to reach significance, F (1, 34) = 2.42, p = .129.

Further, the correlation between subjects' subsequent interest in the target activity and their actual performance on the task in the first period, was .25 (p = .063). Moreover, subjects' task performance during the free-choice period was significantly correlated with task performance in the first period, r = .80, p = .001.

Discussion

A significant interaction effect between the Protestant work ethic and perceived challenge on subjects' free-choice behavior in a social context was found. Several possible explanations are offered. First, the label "difficult" may have caused subjects to experience a sense of "challenge" (cf. Deci, 1972) a

high level of perceived demand characteristics (cf. Salomon, 1984) and arousal (cf. Bond & Titus, 1983; McClelland, 1961, 1985; Wright & Brehm, 1984)) in the first period, therefore, subjects known that more effort is needed for this task. Second, subjects were employees of a large corporation and were asked to participate in this experiment in groups of 10. Therefore, they worked on the task in front of their co-workers and friends. The presence of other people may have created other challenge to these subjects. That is, the performers are motivated to project an image of competence in the presence of others (Baumeister, 1982; Bond & Titus, 1983).

Once subjects' expectations and attitudes toward the task are determined, they tend to behave in such a way that corresponds to their expectations (Ajzen & Fishbein, 1977; Fazio, Powell, & Herr, 1983). It is believed that low PEs' attitude toward the anagrams is carried over to the free-choice period. Tang and Baumeister (1984) suggested that their residual perception of the task then determined their task preference during the free-choice period.

Third, high PEs and low PEs, have developed different patterns of strategy to confront with the demands of the task and the social context. The results of the present study supported the notion that high PEs' free-choice behavior is not affected by the perceived challenge (difficult vs. easy), whereas low PEs' free-choice behavior is enhanced only when they are challenged in a social context.

The results of an ANOCOVA with actual performance in the first period as a covariate showed that the same interaction effect between work ethic and perceived challenge failed to reach significance. Several possible explanations are offered as follows:

First, subjects, in groups of ten, stayed in the same room during the free-choice period, therefore, they did not seem to experience any significant changes except the experimenter left the room. The demand characteristics of the experimenter, the perceived challenge, and the presence of their peers continued to operate in the experiment. Therefore, subjects' task preference during the free-choice period can be considered as a continuation of their performance in the first work period. That is, those who solve more anagrams in the first period continue to spend more time on the second anagram task. They, then, solve more anagrams during the free-choice period.

Second, when low PEs work in a social context, they may have expressed their self-presentational concerns (e.g., Baumeister, 1982). That is, low PEs in the difficult condition tend to show and impress other people that they do not mind working on a difficult task during the free-choice period. The opportunity to appear "work-oriented" is perhaps an external reward, at least to those who value such appearance. Thus, low PEs in the perceived challenge condition continued to spend time on the target task in order to impress their co-workers and the experimenter. Moreover, because low PEs have external locus of control, therefore, they may have a higher tendency to be influenced by others' possible expectations. Therefore, subjects' approval motive needs to be examined.

Experiment 2

The major purpose of Experiment 2 was to examine the effects of work ethic and perceived challenge on subjects' free-choice behavior in an individual setting. Since subjects participated alone, it was reasoned that subjects would have less self-presentational concerns (cf. Baumeister, 1982) than would those in groups (Experiment 1). Second, subjects' social approval motive was examined

in Experiment 2. Third, the perceived challenge was manipulated by giving subjects negative vs. positive "effort" performance feedback. Subjects were 57 Chinese students. The rationale for the use of "effort" feedback is provided as follows:

Stevenson (1983) examined children's school achievement in Japan, Taiwan (Republic of China), and the United States and found that effort was given the greatest number of points for contributing to academic success, followed by ability, task difficulty, and luck. Further, in their rating of effort, mothers in Japan gave the highest rating, followed by mothers in Taiwan, and the United States. The results of Stevenson's (1983) study showed the importance of "effort" in a Chinese sample.

Deci's (1975) theory of intrinsic motivation emphasized the dual themes of competence and control. Further, effort is related to a person's achievement and control. Therefore, it was reasoned that if Chinese subjects were presented with a negative "effort" performance feedback, then, they would perceive that as an important "challenge" (cf. Deci, 1972) which would lead to a high level of intrinsic motivation. Tang and Baumeister (1984) also reported that the distribution of work ethic scores (Mirels & Garrett, 1971) in a Chinese sample was higher than that in a U.S. sample, thus, subjects in the Chinese sample were divided into three groups, reflecting high, medium, and low work ethic endorsement.

A significant interaction effect between work ethic (high, medium, low) and perceived challenge (positive vs. negative performance feedback) on subjects' free-choice behavior was also expected. It was argued that high PEs and low PEs in the Chinese sample would behave in a way that was similar to the high PEs and

low PEs in Experiment 1.

As it was discussed earlier, high PEs' behavioral orientation is different from that of Low PEs. The present author further proposed that medium PEs' behavioral orientation was again different from both high and low PEs. It is argued that medium PEs have lower internal locus of control than high PEs and have lower arousal and fear of failure than low PEs. Therefore, medium PEs might be highly influenced by "the manipulation of the experiment" (positive vs. negative feedback).

Indirect support of this notion can be found in two recent studies (Liu, 1986; Tang, 1986). The effects of Type A personality (Type A, intermediate, Type B) (as measured by Sales, 1969; Vickers, 1975) and task labels (work vs. leisure) on subjects' free-choice behavior were examined by Tang (1986). The interaction effect was significant. In the free-choice period, intermediates (medium group) performed longer on a work-related task than they did on a leisure-related activity. It was suggested that "intermediates' free-choice behavior was affected by the abstract meanings associated with the labels" (Tang, 1986, p. 9). Further, Liu (1986) found significant interaction effect between Type A personality (Type A, intermediate, Type B) and task labels (difficult vs. easy) on subjects' goal-setting which suggested that intermediates in the easy condition set higher goals than did those in the difficult condition. Both studies supported the notion that subjects in the medium group were highly influenced by "the manipulation of the experiment". Since Type A personality and work ethic were significantly correlated (r = .39, Tang & Baumeister, 1984), therefore, it was reasoned that the behavior pattern of the medium group for work ethic might be similar to that of the medium group for Type A.

It has been suggested in the literature that a positive verbal reinforcement tend to enhance intrinsic motivation (Deci, 1972), whereas a negative feedback tend to undermine their intrinsic motivation (Deci & Cascio, 1972). Thus, it was possible that medium PEs would show a higher level of free-choice behavior after positive performance feedback than they would after negative feedback. Because of the lack of a clear rationale for hypothesis 3, the present author would regard the issue related to medium PEs as an interesting exploratory topic. Thus, H3 was tentatively proposed as follows:

H3: Medium PEs would spend more free-choice time on the task in the no perceived challenge (positive feedback) condition than the perceived challenge (negative feedback) condition.

Moreover, the free-choice behavior measured in Experiment 2 was more "private" than that in Experiment 1. It was expected that the free-choice behavior would not be affected by the performance in the first work period.

Further, two separate 3 x 2 ANOCOVAs were conducted by using subjects' task performance during the first work period and subjects' approval motive (Crown & Marlowe, 1964) as covariates. The results of these analyses would be used to examine the extent to which subjects' intrinsic motivation on the target activity during the free-choice period would be affected by subjects' ability to work on the target activity and their approval motive.

Method

Subjects

Subjects were 50 male and 7 female undergraduate students at National Taiwan University, Taiwan, Republic of China. They participated as volunteers. The average age of these subjects was 20.

Measures

A questionnaire which consisted of measurements of the Protestant work ethic (Mirels and Garrett, 1971) and approval motive (Crowne & Marlow, 1964), was translated into Chinese by the author. The Chinese version of the questionnaire was independently translated back to English by two psychologists fluent in both Chinese and English. The author carefully checked the original measures, the Chinese version, and the back translated versions and then made some minor revisions. The aim of the translation was to achieve loyalty of meaning and literal accuracy of the original measures. The final form of this questionnaire was thus regarded as possessing a satisfactory degree of cross-language equivalence. Psychometric properties of the Protestant ethic measure and others as used in a previous Chinese sample and a U. S. sample were presented elsewhere (Tang & Baumeister, 1984). Generally, results suggested the comparability between the measures and the two samples.

The mean and standard deviation of the Protestant ethic measure for Experiment 2 (N = 57) were 84.39 and 9.54, respectively. The mean of the Protestant ethic scale in Experiment 2 (the Chinese sample) was higher than that of Experiment 1 (the U. S. sample). Therefore, subjects in Experiment 2 were divided into three groups by using a three-way split. The cut-off points for the three-way split were 80.5 and 88.5 on the work ethic measure. It should be pointed out that the cut-off point between low and medium PE in this Chinese sample (80.5) was only one point lower than the cut-off point between high and low PE in the U.S. sample (81.5).

Procedure

A questionnaire was administered by the author to undergraduate students who

were taking general psychology. One week later, the experimenter started to recruit students from this class for a one-hour experiment. Only one subject was involved in each experimental session. The experimenter was blind as to whether the subject's endorsement of the Protestant work ethic was high or low.

The subject was told that he or she would solve some Chinese anagrams. The development and construction of Chinese anagrams were based on principles suggested by previous work (e.g., Liu, Chang, & Yang, 1979; Liu, Chiang, & Yeh, 1977; Liu & Yeh, 1977). The instructions for the anagram task were the same as Experiment 1.

Before beginning the anagram-solving period, the experimenter reminded the subject to "work hard" and "exert your effort" on this task. After the first eight-minute period was over, each subject was assigned to the no perceived challenge (i.e., positive effort feedback) group or the perceived challenge (i.e., negative effort feedback) group by the experimenter at random.

In the no perceived challenge (perceived challenge) condition, the experimenter told the subject that:

> You have (have not) solved many anagrams. That is very good (poor) work. I think (do not think) that you have worked very hard and exerted a lot of effort in doing this task.

After the verbal feedback was given, the subject was asked to start the second eight-minute anagram-solving task. A different anagram list was provided.

Before the end of the second eight-minute work period, an observer quietly entered the adjacent observation room. The observer was blind as to whether the subject had received positive or negative effort performance feedback and whether the subject's work ethic was high or low.

It should be pointed out that no performance feedback was given to subjects after the second work period. This was done due to the fact that too much negative feedback could lead to a decrease in intrinsic motivation (Deci, 1972).

After the second work period was over, the experimenter escorted the subject to a second room and asked the subject to sit at a table with another list of Chinese anagrams and pieces of a jigsaw puzzle. The experimenter told the subject that she would have to go and get a copy of the final questionnaire and asked the subject to wait there. The subject was then left alone for 15 minutes, presumably believing that his or her behavior was entirely up to him or her and was not of interest to anyone.

After the experimenter left the experimental room, the observer then observed and recorded the amount of time the subject spent on the Chinese anagrams, the jigsaw puzzle, and relaxation through a one-way mirror for 15 minutes. At the end of the 15-minute period, the experimenter re-entered the room and gave the subject a final questionnaire probing the subject's feelings about the experiment and the various activities. Subjects were then debriefed and asked not to disclose the nature or the purpose of the study.

Results and Discussion

Task Performance

Subjects' task performance during the second work period was examined in a 3 x 2 ANOCOVA using performance on the first anagram list as a covariate. The main effects of work ethic and perceived challenge failed to reach significance, F (2,

50) = .22, p = .80; F (1, 50) = .05, p = .82, respectively. The interaction effect was not significanct, F (2, 50) = .12, p = .89. Therefore, subjects' task performance on the second anagram list was not affected by their work ethic endorsement and perceived challenge. Further, subjects' improvement of task performance from the first to the second work period was also analyzed. The results of a t test suggested that subjects' performance in the second period (M = 12.77) was better than the first one (M = 10.70), t (56) = 3.52, p = .001. When the improvement of task performance was analyzed in a 3 x 2 ANOVA and an ANOCOVA, no significant result was found.

Intrinsic Motivation

The results of a 3 x 2 ANOVA suggested that the interaction between the Protestant ethic and effort performance feedback on intrinsic motivation was significant, F (2, 51) = 4.95, p = .011, omega squared = .120. The main effect of work ethic did not reach significance, F (2, 51) = 1.87, p = .164. The main effect of perceived challenge was negligible, $F < 1$, n.s. The means of the interaction effect are presented in Table 2.

Insert Table 2 about here

Hypothesis 1 predicted that low PEs in the perceived challenge situation would spend more time on the target task in the free-choice period than would other groups. The procedure suggested by Bobko (1986) was also used here. First, a one-way ANOVA was conducted to examine the differences among high PE/positive feedback group, low PE/positive feedback group, and high PE/negative feedback group. The results showed a non-significant effect, F (2, 24) = 1.54, p = .24.

Second, the result of a planned comparison t test showed that after negative performance feedback, low PEs spent more free-choice time on the anagrams (M = 407.27) than did the average of the other three groups (M = 200.05), t (51) = 1.96, $p < .05$. Therefore, H1 was supported by the present data.

Further, the results of the simple main-effects test revealed that high PEs spent about equal amount of their free-choice time on the target activity regardless of performance feedback, F (1, 51) = 2.33, p = 1.33. Thereby, the present data failed to reject the null hypothesis (H2).

Moreover, medium PEs in the positive feedback group expressed significantly higher level of intrinsic motivation than did those in the negative feedback group, F (1, 51) = 6.45, p = .014. Thus, H3 was supported by the present data.

Further, the results of the simple main-effects test for negative performance feedback showed a significant difference between the three PE groups, F (2, 51) = 3.98, p = .025. The result of further LSD procedures suggested that following negative feedback, low PEs spent significantly more free-choice time on the anagrams than did medium PEs, ($p < .05$). Moreover, the differences between high PEs and medium PEs' and between low PEs and high PEs' intrinsic motivation on the target activity failed to reach significance after negative feedback. Further, the simple main-effects test for positive performance feedback did not reach significance, F (2, 51) = 2.85, p = .067. Therefore, after positive performance feedback, there were no significant differences among high, medium, and low PEs. However, low PE/negative feedback group spent more time on the task than did high PE/positive feedback group, t (51) = 2.62, $p < .05$. Moreover, low PEs receiving positive feedback were not different from low PEs receiving negative feedback, F (1, 51) = 1.75, p = .192. Finally, low PEs in the negative

feedback condition spent more time on the task than did the average of the other five groups (M = 204.03), t (51) = 2.07, $p < .05$.

Using performance on the first anagram list as a covariate, the interaction between Protestant ethic endorsement and perceived challenge was again significant, F (2, 50) = 4.65, p = .014. The correlation between task performance during the first work period and the intrinsic motivation measure was -.07 (p = .296). Therefore, subjects' intrinsic motivation was not affected by their actual performance on the task. Further, using social approval motive as a covariate, the same interaction was again significant, F (2, 50) = 4.89, p = .011. The correlation between subjects' social approval motive and the intrinsic motivation measure was .01 (p = .467). Thus, subjects' intrinsic motivation was not affected by their motive to please others. It can be concluded that the intrinsic motivation measure in Experiment 2 was genuinely intrinsic.

Conclusion

Effects of the Protestant work ethic and perceived challenge on subjects' time allocated to an experimental task were examined in two experiments. It should be pointed out that first, the subjects in these two studies were from two different cultures. Second, subjects in Experiment 1 were full-time employees of a major corporation, whereas those in Experiment 2 were full-time students at a University. Third, the perceived challenge was manipulated differently in these two studies. Fourth, subjects in Experiment 1 performed their tasks in groups of 10 people, whereas those in Experiment 2 performed individually in a private setting.

In spite of these cultural and methodological differences of these two experiments, several important results were found. First, in both experiments,

the amount of free-choice time subjects chose to spend on the target activity was determined by an interaction effect between subjects' endorsement of the Protestant ethic and the perceived challenge.

Second, in both studies the target task was the same for all subjects. The present findings further support the results of Tang and Baumeister (1984) in that subjects' time spent on the task in the free-choice period is partly an enjoyment of the abstract meaning of the task and the experimental context rather than the enjoyment of the activity itself.

Third, for people who endorsed the work ethic, they showed almost the same amount of interests in the task with (difficult label/negative performance feedback) or without perceived challenge (easy label/positive performance feedback). Thus, perceived challenge has no effect on high work ethic individuals' behavior in the free-choice period.

Fourth, in both studies when low work ethic subjects were challenged, they allocated more time to the target task than the average of the other groups. Thereby, the combination of low work ethic and perceived challenge in a social context leads to the highest amount of time allocated to the experimental task in the free-choice period (cf. Bobko, 1986).

Fifth, medium work ethic subjects in the positive performance feedback condition showed a higher level of intrinsic motivation on a task than did those in the perceived challenge (negative performance feedback) condition. Thus, medium work ethic subjects' intrinsic interests in a task are influenced by the manipulation of the experiment. It appears that high, medium, and low work ethic people all have different patterns of behavioral orientation in an experiment.

Sixth, subjects' free-choice behavior was affected by their task performance

in the first work period if it was measured in a social context (Experiment 1), but not affected if it was measured in a private setting (Experiment 2). It appears that subjects' time allocation in a group setting is influenced by their self-presentational concerns. In a private situation, subjects' free-choice time allocated to the target task is a genuine reflection of their intrinsic motivation which is not affected by their task performance in the first period nor by their motive to please others.

The results of the present study further supported previous findings that low work ethic individuals are mainly affected by their fear of failure (e.g., Greenberg, 1977). A small amount of challenge does increase low work ethic individuals' intrinsic motivation on a task (Deci, 1972). Further, people's free-choice behavior in a social context is influenced by their self-presentational concerns, whereas those people's behavior in a private situation is not (Tang & Baumeister, 1984).

Based on the results of Experiment 2, one should give different feedback to different people in order to enhance intrinsic motivation. For people with medium work ethic endorsement, positive feedback should be used. For people with low work ethic endorsement, negative feedback is the most effective way to improve their intrinsic motivation on a target activity. For people with high work ethic endorsement, little feedback is needed.

As Deci (1972) pointed out that too much negative feedback might threaten a person's sense of competence and self-determination, which in turn might lead to a decrease in intrinsic motivation. Therefore, the long-term effect of negative effort performance feedback on low PEs' intrinsic motivation and self-esteem needs to be examined further.

The results of the present study may have important implications as related to the use of challenge or negative performance feedback in organizations. The use of punishment, threat of punishment, warning, and dismissal is not uncommon in organizational and industrial settings. Anderson (1976) studied over 1,600 manufacturing employees and discovered that the marginal employee is typically one of a small number of employees who cause the most problems. It was suggested that a supervisor's failure to identify and deal with marginal employees may result in not only lowered performance on the part of the employees but also diminished motivation and effectiveness of the whole work group. Therefore, the appropriate utilization of sanctions or negative performance feedback may actually increase the performance of the entire organization (Arvey & Ivancevich, 1980; O'Reilly & Weitz, 1980; Steers & Porter, 1983).

Many recent research studies on performance feedback have been conducted in laboratory settings (e.g., DeNisi, Randolph, & Blencoe, 1983; Matsui, Okada, & Inoshita, 1981). As a consequence of using a laboratory research strategy, the generalizability of the results of the present study to the real work setting is limited. However, it was also pointed out in the literature that results of a study using a field research strategy would have been no more generalizable than a laboratory strategy (cf., Berkowitz & Donnerstein, 1982; Cook & Campbell, 1979). Therefore, replications of the present findings in both laboratory and field settings are necessary before a firm conclusion can be made.

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Table 1

Free-Choice Time Spent on Anagram Task

	Task Label			
	Difficult		Easy	
Work Ethic	M	N	M	N
High	338.00	15	456.00	10
Low	516.00	15	356.67	9

Note. Scores represent mean numbers of seconds subjects spent on the target task during a 15-minute free-choice period.

Table 2

Free-Choice Time Spent on Anagram Task

	Performance Feedback			
	Positive		Negative	
Work Ethic	M	N	M	N
High	71.80	10	269.11	9
Medium	382.20	10	37.78	9
Low	259.25	8	407.27	11

Note. Scores represent mean numbers of seconds subjects spent on the target task during a 15-minute free-choice period.